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REPORT ON THE VEB COMMUNICATIONS EQUIPMENT PLANT IN LEIPZIG

The VEB Communications Equipment Plant in Leipzig is located at Strasse des Komsomols 155. It comes under the jurisdiction of the Main Administration for Radio and Telecommunications. Engineer Graetz is the present head of the plant. The principal operation of the plant is the development and manufacture of special electroacoustic equipment for use in intercommunications systems in industrial plants. This equipment is delivered in desk-type form. The basic component parts consist of a microphone, a tape recorder, an amplifier, and a loudspeaker. Industrial intercommunications systems are used in the larger plants in the GDR and the USSR, for political-instruction purposes during rest periods, and the size and capacity of each intercommunications system must be especially developed for each plant. The intercommunications systems are assembled from parts supplied by other radio and communications-equipment plants. Construction of the amplifiers for low-frequency operation was worked out by the EIa Designing Office in [the VEB Communications Equipment Plant] Leipzig. The writer of this report was head of this office.

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The tubes received at the Ela Designing Office from radio and telecommunications plants for use in developmental work had a very short life according to present technical standards. Engineers entrusted with the production of these tubes stated that there was a lack of raw materials for spraying the electrodes, and so, despite great pains with the designing, it was not possible to build equipment capable of functioning under operational conditions. The "Leistungspotis." [potentiometer?] situation is very bad because of the scarcity of refined alloy wire. There have been instances known to the writer in which otherwise completed apparatus could not be delivered because they lacked the "Pottis." [sic; presumably the same as "Leistungspotis," above]. A special bottleneck has been the lack of availability of machine tools and tool steel. Production has been badly disrupted because of inopportune delays in parts deliveries.

In the last series production of 1,000 two-way intercommunications systems with which the writer was concerned, he was constantly plagued by having to deal with people almost completely unacquainted with the field. The Ministry of the Interior in Berlin was the contractor in this case. All difficulties and interruptions in the production of this equipment had to be reported immediately to Berlin. The first apparatus of the 0-series [prototype series?], built according to data supplied from Berlin, were not usable. Despite the impending series production and the fixed terms of delivery, the source had to undertake complete redesigning of the apparatus. After completion of this redesigning and testing of the second 0-series, production got under way. Even at the time of testing it was determined that the tubes supplied for the equipment varied greatly in performance. Performance graphs on several tubes showed great differences in transconductance and in working point. Because of these delays, series production was delayed about a month.

The plant also produces about 3,000 horns (Hupen) a month, divided into several categories, such as simple warning buzzers for use in open-pit mines, firedamp-proof warning horns for use in underground mines, and foghorns for ships.

The Designing Office for Mining, which is also located in the plant, works on research contract from Berlin for the improvement of communications equipment in underground mines. Intentions are to discard the manually-operated switchboards which have been in use and to install dial systems. There are difficulties in providing absolute protection against firedamp, since, according to regulations issued by the Mining Office in Dortmund (West Germany), which also apply in the GDR, the equipment must be tested under a certain condition of pressure. Because the dial equipment is much larger [than manually operated switchboards], the cost of producing the necessary housings is much higher.

A third Designing Office, that for fire-alarm offices, should also be mentioned. Here planning and designing for series production of metropolitan fire alarm systems are being worked out. A system of this type is to consist of 12 circuits with an automatic teleprinter. The fire-alarm boxes now in production are to be used in the new systems as impulse-alarm boxes. The production figure for these alarm boxes is about 400 a month.

The persons connected with the production of alarm boxes are, almost without exception, apprentices. They are organized into groups and engage in competition to increase production. The fire-alarm boxes produced suffer from this type of production. On occasion, as much as 40 percent of the work is sent back by inspectors to be redone.

In the main, this lack of technical proficiency on the part of the apprentices is caused by inadequate technical training. Considering the fact that the 3 days a week in school do not include technical training, the apprentice cannot become a skilled worker at the end of his 2-year training period.

The plant, at present, has a development staff consisting of 11 engineers and 21 technicians. The engineers hold a weekly production conference to discuss new research contracts from Berlin.

One of these contracts concerns the production of jamming stations, with capacities of 25 and 50 watts. The stations will be used locally to jam the signal of NWDR (Nordwest Deutscher Rundfunk, North German Radio, Berlin).

Further, the plant will begin construction of a short-wave transmitter jointly with the VEB Communications Equipment Plant in Erfurt. According to details from the head of the plant, this concerns the series production of 10-watt transmitters for use by the KVP (Kasernierte Volkspolizei, Garrisoned People's Police). The frequency has not yet been determined. The number of such transmitters to be produced is not known to the writer.

The writer also knows that the VEB Communications Equipment Plant in Koepenick is working on the development of a marine microphone. The first attempts were most promising. A small number have already been produced. In actual use, however, they were found to be not ready for full production, so developmental work has continued.

The production of microphones at the Leipzig plant is very small, about 100 a month.

In the field of electronics development, the GDR has lagged behind other countries. For example, building-protection systems (Raumschutzanlagen) are for the most part constructed with closed-circuit current systems.

A development office for decimeter equipment is located in Berlin. The development of decimeter equipment has been greatly neglected, in the writer's opinion, mainly because of the lack of capable people at the development level.

A large-scale school radio program is to be started in the near future, requiring delivery of an amplifier mounting for each school building. Two radio receivers will be installed in these for receiving two different programs during school hours. This gives each classroom teacher the possibility of tuning in on one program by means of remote control of relays. Since the receivers may not be adequate under peak-load conditions, as when all classes are tuned in on the same program, a 4-watt amplifier will be provided for the loudspeaker in each classroom. The low-frequency 6V6 amplifier tube is to be used.

The 4-watt amplifier is located above the low-frequency transformer in the receiver. The switchover from one frequency to the other is accomplished by means of a relay located in the 4-watt amplifier. Production of these items will be sufficient to equip all schools and rest homes.

In conversations with engineers at the VEB Communications Equipment plant in Erfurt, the writer has learned that transmitter and receiving equipment produced for the People's Police is undergoing improvement research in one development office.

This equipment is used only in radio patrol cars and its performance at present is still very poor. Frequently, reception is poor when a patrol car is close to a tall building because of the quantity of iron used in the building. If the building is between the transmitter and the receiver, then reception is impossible.

To eliminate disturbance caused by television, the new apparatus will be built with three channels, one basic frequency and two alternative frequencies. The power of the car radio transmitter will be increased 1.5 times. Because of the greater range obtained, it is planned to include nearby villages in the patrol car's district. A relay transmitter station will have to be built in each village.

In a special development office in Leipzig, work is being done on developing a two-way automobile radio. According to the writer, this set will look like a normal automobile superheterodyne radio. By means of a concealed switch, the receiver can be switched over to transmission. To reduce the battery wear, a Morse key will be used for transmitting instead of a phone apparatus. After the switchover, the power tube of the receiver will be used as the transmitter tube. The apparatus will be equipped with "E! Stahlserie" [tubes?]. The writer does not know definitely for what purpose this apparatus is designated but believes it is suitable for use by agents in West Germany in sending reports to the GDR. The Morse key plugs in at the back of the radio for transmitting. The writer believes the transmitting wave length is about in the 10-meter band but is not certain.

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